

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1           1.       (Cancelled)

1           2.       (Currently Amended) The method of claim [[1]] 5, wherein the components  
2 include a second packet-based network, the method further comprising assigning performance  
3 parameters for the second packet-based network.

1           3.       (Currently Amended) The method of claim [[1]] 5, wherein assigning the  
2 performance parameters further includes assigning a packet delay parameter.

1           4.       (Currently Amended) The method of claim [[1]] 5, wherein assigning the  
2 performance parameters further includes assigning a packet loss parameter.

1           5.       (Currently Amended) ~~The method of claim 1,~~ A method of determining  
2 performance of a communications system, comprising:  
3               storing representations of plural components of the communications system, the  
4 components including a first packet-based network and at least one network device;  
5               assigning performance parameters for each of the components, the performance  
6 parameters comprising at least a first performance parameter and a second performance  
7 parameter;  
8               combining the first performance parameters of respective components to derive an  
9 overall first performance parameter;  
10              combining the second performance parameters of respective components to derive  
11 an overall second performance parameter; and  
12              deriving a quality indication of the communications system based at least on the  
13 overall first and second performance parameters,  
14              wherein assigning the performance parameters includes assigning a packet jitter  
15 parameter.

1           6.       (Currently Amended) The method of claim [[1]] 5, wherein storing the  
2 representations includes storing models of the plural components, the models capable of being  
3 linked to create a representation of the communications system.

1           7.       (Original) The method of claim 6, further comprising providing a graphical user  
2 interface in which the models may be manipulated to create the representation of the  
3 communications system.

1           8.       (Currently Amended) ~~The method of claim 1,~~ A method of determining  
2 performance of a communications system, comprising:  
3                   storing representations of plural components of the communications system, the  
4 components including a first packet-based network and at least one network device;  
5                   assigning performance parameters for each of the components, the performance  
6 parameters comprising at least a first performance parameter and a second performance  
7 parameter;  
8                   combining the first performance parameters of respective components to derive an  
9 overall first performance parameter;  
10                  combining the second performance parameters of respective components to derive  
11 an overall second performance parameter; and  
12                  deriving a quality indication of the communications system based at least on the  
13 overall first and second performance parameters,  
14                  wherein deriving the quality indication includes calculating an E-model quality  
15 rating value.

1           9.       (Currently Amended) The method of claim [[1]] 5, further comprising combining  
2 the representations of the plural components to create the communications system.

1           10.      (Cancelled)

1           11.      (Currently Amended) The apparatus of claim 35, wherein the ~~one or more~~ second  
2 performance parameters include [[a]] packet [[delay]] delays.

1           12.    (Original) The apparatus of claim 11, wherein the packet delay of each network  
2 component is treated as an independent variable.

1           13.    (Currently Amended) The apparatus of claim 12, wherein the controller  
2 calculates an overall packet delay of the communications system by summing the packet delays  
3 of the plural components, the overall second performance parameter comprising the overall  
4 packet delay.

1           14. – 15. (Cancelled)

1           16.    (Previously Presented) The apparatus of claim 35, wherein the representation of  
2 the packet-based network includes a representation of a collection of links and routers.

1           17.    (Previously Presented) The apparatus of claim 35, wherein the representation of  
2 the packet-based network includes a representation of an Internet Protocol network.

1           18.    (Previously Presented) The apparatus of claim 35, wherein the packet-based  
2 network includes a public network, and wherein the storage device further contains a  
3 representation of a local network.

1           19.   (Currently Amended) ~~The apparatus of claim 35,~~ An apparatus for determining  
2 performance of a communications system, comprising:  
3               a storage device containing representations of plural components of the  
4 communications system, the plural components including a packet-based network and at least  
5 one network device, each of the components being assigned one or more performance  
6 parameters; and  
7               a controller to calculate a predicted quality of the communications system based  
8 on the one or more performance parameters, wherein the predicted quality comprises a value that  
9 is representative of a subjective perceived quality of communications in the communications  
10 system by a user,  
11              wherein the performance parameters comprise at least first and second  
12 performance parameters;  
13              the controller to combine the first performance parameters of respective  
14 components to derive an overall first performance parameter, and the controller to combine the  
15 second performance parameters of respective components to derive an overall second  
16 performance parameter, the controller to calculate the predicted quality based at least on the  
17 overall first performance parameter and the overall second performance parameter,  
18              wherein the storage device further contains a representation of a circuit-switched  
19 device.

1           20.   (Currently Amended) An article including one or more machine-readable storage  
2 media containing instructions for modeling performance of a communications system, the  
3 instructions when executed causing a controller to:

4                   store models of plural components of the communications system, the plural  
5 components including a packet-based network and at least one network device, the stored models  
6 containing at least first performance parameters and second performance parameters associated  
7 with respective components, wherein the first performance parameters include packet jitter  
8 parameters;

9                   combine the models to represent the communications system;

10                  combine the ~~first performance~~ packet jitter parameters of respective components  
11 to derive an overall ~~first performance~~ packet jitter parameter;

12                  combine the second performance parameters of respective components to derive  
13 an overall second performance parameter; and

14                  determine a quality level of the communications system using at least the overall  
15 ~~first performance~~ packet jitter parameter and overall second performance parameter.

1           21.    (Currently Amended) ~~The article of claim 20,~~ An article including one or more  
2    machine-readable storage media containing instructions for modeling performance of a  
3    communications system, the instructions when executed causing a controller to:  
4                store models of plural components of the communications system, the plural  
5    components including a packet-based network and at least one network device, the stored models  
6    containing at least first performance parameters and second performance parameters associated  
7    with respective components;  
8                combine the models to represent the communications system;  
9                combine the first performance parameters of respective components to derive an  
10   overall first performance parameter;  
11               combine the second performance parameters of respective components to derive  
12   an overall second performance parameter; and  
13               determine a quality level of the communications system using at least the overall  
14   first performance parameter and overall second performance parameter,  
15                wherein the instructions when executed cause the controller to derive an E-model  
16   rating using the stored models.

1           22.    (Cancelled)

1           23.    (Original) The article of claim 20, wherein the performance parameters are  
2    associated with communications of packets through the communications system.

1           24.    (Currently Amended) The article of claim 23, wherein the second performance  
2    parameters include at least one of a packet delay[[,]] and packet loss, ~~and packet jitter.~~

1           25.    (Cancelled)

1           26.    (Currently Amended) The article of claim 20, wherein the second performance  
2    parameters include at least one of a packet delay, ~~packet jitter,~~ and packet loss.

1           27.   (Previously Presented) A data signal embodied in a carrier wave and including  
2 one or more code segments containing instructions for predicting performance of a  
3 communications system, the instructions when executed causing a controller to:  
4               assign performance parameters to each of plural components in the  
5 communications system, the plural components including a packet-based network, the  
6 performance parameters comprising packet loss, packet jitter, and packet delay; and  
7               derive a quality indication based on the packet losses, packet jitters, and packet  
8 delays of the plural components.

1           28.   (Cancelled)

1           29.   (Currently Amended) ~~The method of claim 28,~~ A method of determining  
2 performance of a communications system, comprising:  
3                   storing representations of plural components of the communications system, the  
4 components including a first packet-based network and at least one network device;  
5                   assigning performance parameters for each of the components, the performance  
6 parameters comprising at least a first performance parameter and a second performance  
7 parameter;  
8                   combining the first performance parameters of respective components to derive an  
9 overall first performance parameter;  
10                  combining the second performance parameters of respective components to derive  
11 an overall second performance parameter; and  
12                  deriving a quality indication of the communications system based at least on the  
13 overall first and second performance parameters,  
14                  wherein combining the first performance parameters comprises combining packet  
15 delays of respective components to derive an overall packet delay, and wherein combining the  
16 second performance parameters comprises combining packet losses of respective components to  
17 derive an overall packet loss.  
18                  wherein the performance parameters further comprise packet jitter, the method  
19 further comprising combining the packet jitters of respective components to derive an overall  
20 packet jitter,  
21                  wherein deriving the quality indication is further based on the overall packet jitter.



1           30.    (Currently Amended) ~~The method of claim 1, further comprising~~ A method of  
2 determining performance of a communications system, comprising:  
3               storing representations of plural components of the communications system, the  
4 components including a first packet-based network and at least one network device;  
5               assigning performance parameters for each of the components, the performance  
6 parameters comprising at least a first performance parameter and a second performance  
7 parameter;  
8               combining the first performance parameters of respective components to derive an  
9 overall first performance parameter;  
10              combining the second performance parameters of respective components to derive  
11 an overall second performance parameter;  
12              deriving a quality indication of the communications system based at least on the  
13 overall first and second performance parameters; and  
14              assigning an audio CODEC type parameter to at least one of the components,  
15              wherein deriving the quality indication is further based on the audio CODEC type  
16 parameter.

1           31.    (Original) The method of claim 1, further comprising assigning at least one of a  
2 signal loss parameter, echo parameter, and noise parameter to at least another one of the  
3 components,  
4               wherein deriving the quality indication is further based on the at least one of the  
5 signal loss parameter, echo parameter, and noise parameter.

1           32.    (Currently Amended) The method of claim [[1]] 5, wherein deriving the quality  
2 indication comprises deriving a mean opinion score (MOS).

1           33.    (Currently Amended) The method of claim [[1]] 5, wherein deriving the quality  
2 indication comprises deriving a value that is representative of a subjective perceived quality of  
3 communications in the communications system by a user.

1           34.   (Currently Amended) ~~The apparatus of claim 35,~~ An apparatus for determining  
2 performance of a communications system, comprising:  
3               a storage device containing representations of plural components of the  
4 communications system, the plural components including a packet-based network and at least  
5 one network device, each of the components being assigned one or more performance  
6 parameters; and  
7               a controller to calculate a predicted quality of the communications system based  
8 on the one or more performance parameters, wherein the predicted quality comprises a value that  
9 is representative of a subjective perceived quality of communications in the communications  
10 system by a user,  
11              wherein the performance parameters comprise at least first and second  
12 performance parameters;  
13              the controller to combine the first performance parameters of respective  
14 components to derive an overall first performance parameter, and the controller to combine the  
15 second performance parameters of respective components to derive an overall second  
16 performance parameter, the controller to calculate the predicted quality based at least on the  
17 overall first performance parameter and the overall second performance parameter,  
18              ~~wherein the value comprises at least one of an E-model quality rating value, mean~~  
19 ~~opinion score (MOS), percentage of users that view a connection as good or better, percentage of~~  
20 ~~users that view a connection as poor or worse, and percentage of connections that users may~~  
21 ~~terminate early due to quality problems.~~

1           35.   (Currently Amended) An apparatus for determining performance of a  
2   communications system, comprising:  
3               a storage device containing representations of plural components of the  
4   communications system, the plural components including a packet-based network and at least  
5   one network device, each of the components being assigned one or more performance  
6   parameters; and  
7               a controller to calculate a predicted quality of the communications system based  
8   on the one or more performance parameters, wherein the predicted quality comprises a value that  
9   is representative of a subjective perceived quality of communications in the communications  
10   system by a user,  
11              wherein the performance parameters comprise at least first and second  
12   performance parameters;  
13              the controller to combine the first performance parameters of respective  
14   components to derive an overall first performance parameter, and the controller to combine the  
15   second performance parameters of respective components to derive an overall second  
16   performance parameter, the controller to calculate the predicted quality based at least on the  
17   overall first performance parameter and the overall second performance parameter, wherein the  
18   first performance parameters comprise packet jitter parameters.

1           36.   (Previously Presented) The article of claim 20, wherein the quality level  
2   comprises a mean opinion score (MOS).

1           37.   (Previously Presented) The data signal of claim 27, wherein deriving the quality  
2   indication comprises deriving at least one of an E-model quality rating and a mean opinion score  
3   (MOS).